

Work Order ID 133485

133485

Page 1

Monday, June 08, 2015 4:12:13 PM

Item ID: D2892-1

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Support

Start Date: 6/08/15

Start Qty: 10.00

10

Cust Item ID:

Required Date: 6/08/15

Req'd Qty: 10.00

10

Customer:

Reference:

Approvals:

Process Plan: MLJDate: JUN 09 2015 Tooling:

Date: _____

Run Start *NR1*

QC: _____

Date: _____ SPC (Y/N): _____

Date: _____

Stop *NR2*

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

Draw Nbr

Revision Nbr

D2892

B

100

0.00

100

HAAS CNC VERTICAL MACHINING #1

HAAS 1

Memo

0.06

HAAS CNC vertical machine #1

1-Machine as per Folio FA082
2-Deburr

10

2

15/06/14
PTO →

110

QC2- Inspect parts off machine FAI/FAIB

0.00

110

QC

Memo

0.00

Quality Control

10

2

15/06/13
DAS

120

QC8- Inspect parts - second check

0.00

120

QC

Memo

0.00

Quality Control

D.A. 15/06/15

10

0

DAS
08
988

NCR →

DQA: DA Date: 15/06/30

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: RJN Date: 15/06/19Work Order update only ☐

Work Order: <u>133485</u>		DISPOSITION		AGAINST DEPARTMENT/PROCESS			
Part No. <u>D2892-1</u>		Rework ☐		Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐
NCR No. <u>15-5111</u>		Scrap ☒		Machining ☒	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐
		Use-as-is ☐		Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐
		Suspected Unapproved ☐		Large Fab ☐	Composite ☐	Supplier ☐	
Date: <u>15-06-15</u>	Step #: <u>100</u>	QTY Effective: <u>(2)</u>				MRB (QSI042) Approval DAS 16 9-89 <u>15/06/15</u>	
Description Work Order Deviation				Disposition			
Blank damaged on first operation - Roughing tool went too deep RC → Did not set the setting right in machine				Scrap & Destroy AND Reorder M <u>DSK077</u> qty <u>1</u> <u>116429</u>			
				Completed By <u>DA</u> <u>15/06/15</u> Lead hand / Supervisor Approval Verification DAS 08 9-89 <u>15/06/15</u> QC / QA Coordinator Approval DAS 9 9-89 <u>150615</u>			
Root Cause		FAULT CATEGORY					
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☒		
Design ☐	Operator ☒	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐		
Doc/Data ☐	Offset/Setup ☒	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐		
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐		
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐		
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐		
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☒	Drawing ☐		
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐		
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐		
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐		
Past Expiry Date ☐	Manufacturing Process ☐						
Misidentified ☐	Past Due ☐	OTHER :					

Work Order ID 133485

133485

Page 2

Monday, June 08, 2015 4:12:13 PM

Item ID: D2892-1 Accept *N900040100* Setup Start *NS1*

Revision ID: Stop *NS2*

Item Name: Support

Start Date: 6/08/15 Start Qty: 10.00 *10* Cust Item ID:

Required Date: 6/08/15 Req'd Qty: 10.00 *10* Customer:

Reference:

Approvals: Process Plan: Date: Tooling: Date: Run Start *NR1*

QC: Date: SPC (Y/N): Date: Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130		0.00				10			EN 150616
130		0.00							
HandFXtube	Memo								
Hand Finishing Crosstubes	Per note 8 on page 1 of dwg D2892, Prep inner concave surface of support and apply 3M Scotch-Weld as per dwg. 24h of cure time <u>15:132 391</u>								
140	QC3- Inspect Part Finish	0.00				10			150617
140		0.00							
QC	Memo								
Quality Control									
170	Identify as per dwg & Stock Location: <u>LG52</u>	0.00				10			150617
170		0.00							
Packaging	Memo								
Packaging	LOCATION : LG052								

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabelled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : ☐					

Work Order ID 133485

133485

Page 3

Monday, June 08, 2015 4:12:13 PM

Item ID: D2892-1

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Support

Start Date: 6/08/15

Start Qty: 10.00

10

Cust Item ID:

Required Date: 6/08/15

Req'd Qty: 10.00

10

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start *NR1*

QC:

Date:

SPC (Y/N):

Date:

Stop *NR2*

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

180

QC21- Final Inspection - Work Order Release

0.00

180

QC

Memo

0.02

Quality Control

MLS

JUN 18 2015

MLS

JUN 17 2015

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐							
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval				
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval			
Root Cause		FAULT CATEGORY									
Environment	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐	Power Loss/Surge	☐	Positioned Wrong	☐
Design	☐	Operator	☐	Bending	☐	Set-up	☐	Folio/Program	☐	Outside Dimensions	☐
Doc/Data	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐	Grain	☐	Over/Under tolerance	☐
Equip/Tooling	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐	Weld	☐	Part Incorrect	☐
Handling/Pre	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐	Wrong Stock Pulled	☐	Part Lost/Missing	☐
Material	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐	Out of Sequence	☐	Part Moved	☐
Internal Transport	☐	Poor Information	☐	Crushing	☐	Countersink	☐	Off-set	☐	Drawing	☐
Tribal Knowledge	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐	Mislabeled	☐	Finish	☐
LOA	☐	Product Improvement	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐	Fit/Function	☐	Misread	☐
Substation	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐	Misaligned/off center	☐	Turning Sequence	☐
Past Expiry Date	☐	Manufacturing Process	☐	OTHER :							
Misidentified	☐	Past Due	☐								

Picklist Print

Page 1

Monday, June 08, 2015 4:12:13 PM

Work Order ID: 133485

133485

Parent Item: D2892-1

D2892-1

Parent Item Name: Support

Start Date: 6/08/15

Required Date: 6/08/15

Start Qty: 10.00

Required Qty: 10.00

Comments: IPP C02.11.26Added P/O KJ
IPP D 08.03.19 Re-format EC verified by: DD IPP Rev:E
11.08.04 as per dwg rev.B DD verf:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

DSK077

Manufactured No

110

Each

8.0000

0.5

5

DSK077******

D2892-1 Turning Detail

LocationLoc QtyLoc Code

MAT060

8

116429

8

6

15/06/14

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QS1042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

DART AEROSPACE LTD		Work Order: 133485
Description: Ø2.500 Support		Part Number: D2892-1
Inspection Dwg: D2892	Rev: B	Page 1 of 1

FIRST ARTICLE INSPECTION DIMENSION SHEET

				Record Actual Dimensions				
Dim	Min	Max	Go/No Go Gauge	1	2	3	4	5
HAAS Section								
AA	0.115	0.150		0.130	0.133	0.131	0.131	0.131
AB	0.290	0.310		0.300	0.300	0.300	0.300	0.300
AC	0.040	0.060		0.047	0.048	0.051	0.050	0.052
AD	0.115	0.150		0.125	0.125	0.125	0.125	0.125
AE	0.240	0.260		0.240	0.250	0.245	0.246	0.240
AF	0.188	0.193		0.190	0.190	0.190	0.190	0.190
AG	0.240	0.260		0.250	0.250	0.250	0.250	0.250
AH	1.116	1.156		1.146	1.149	1.153	1.148	1.146
AI	0.454	0.474		0.464	0.463	0.464	0.464	0.464
AJ	0.240	0.260		0.250	0.250	0.250	0.250	0.250
AK	0.053	0.073		0.062	0.062	0.062	0.062	0.062
AL	0.257	0.262		0.259	0.259	0.259	0.259	0.259
AM	1.663	1.683		1.675	1.674	1.673	1.675	1.676
AN	0.053	0.073		0.062	0.062	0.062	0.062	0.062
AO	0.022	0.042		0.031	0.031	0.031	0.031	0.031
AP	2.779	2.789		2.785	2.784	2.784	2.784	2.784
AQ								
AR								
AS								
AT								
Accept/Reject								

Measured by: <i>[Signature]</i>	Date: 15/06/13
Audited by: <i>[Signature]</i>	Date: 15/06/15
Preliminary Approval:	Date:

Rev	Date	Change	Revised by	Approved
A	02.12.12	New Issue	KJ/RF	
B	08.04.21	Reformat	KJ/JLM	
C	12.01.31	Dwg Rev updated	KJ	
D	13.05.22	Dimensions updated	KJ	<i>[Signature]</i>

DART AEROSPACE LTD		Work Order: 133485
Description: Ø2.500 Support		Part Number: D2892-1
Inspection Dwg: D2892	Rev: B	Page 1 of 1

FIRST ARTICLE INSPECTION DIMENSION SHEET

				Record Actual Dimensions				
Dim	Min	Max	Go/No Go Gauge	X 6	X 7	X 8	X 9	X 10
HAAS Section								
AA	0.115	0.150		0,131	0,131	0,131	0,131	0,131
AB	0.290	0.310		0,300	0,300	0,300	0,300	0,300
AC	0.040	0.060		0,051	0,051	0,053	0,048	0,051
AD	0.115	0.150		0,125	0,125	0,125	0,125	0,125
AE	0.240	0.260		0,245	0,245	0,245	0,246	0,240
AF	0.188	0.193		0,190	0,190	0,190	0,190	0,190
AG	0.240	0.260		0,250	0,250	0,250	0,250	0,250
AH	1.116	1.156		1,149	1,147	1,151	1,154	1,147
AI	0.454	0.474		0,462	0,464	0,464	0,464	0,466
AJ	0.240	0.260		0,250	0,250	0,250	0,250	0,250
AK	0.053	0.073		0,062	0,062	0,062	0,062	0,062
AL	0.257	0.262		0,259	0,259	0,259	0,259	0,259
AM	1.663	1.683		1,675	1,677	1,675	1,677	1,679
AN	0.053	0.073		0,062	0,062	0,062	0,062	0,062
AO	0.022	0.042		0,031	0,031	0,031	0,031	0,031
AP	2.779	2.789		2,784	2,784	2,784	2,784	2,784
AQ								
AR								
AS								
AT								
Accept/Reject								

Measured by: <i>[Signature]</i>	Date: 15/06/14
Audited by: <i>[Signature]</i> DAS 08 9-89	Date: 15/06/15
Preliminary Approval:	Date:

Rev	Date	Change	Revised by	Approved
A	02.12.12	New Issue	KJ/RF	
B	08.04.21	Reformat	KJ/JLM	
C	12.01.31	Dwg Rev updated	KJ	
D	13.05.22	Dimensions updated	KJ <i>[Signature]</i>	<i>[Signature]</i>

NOTES:

1) MATERIAL: 17-4 PH STAINLESS STEEL, H900 OR H925 CONDITION
MIN UTS = 170 KSI (38 HRC)
(REF DART SPEC. D6104)

2) FINISH: NONE

3) TOLERANCES: PER DART QSI 018 (REF. X.XXX = ± 0.010) UNLESS OTHERWISE NOTED

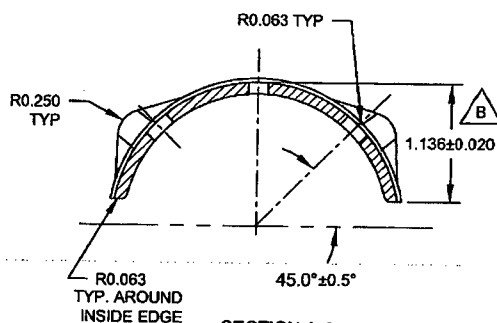
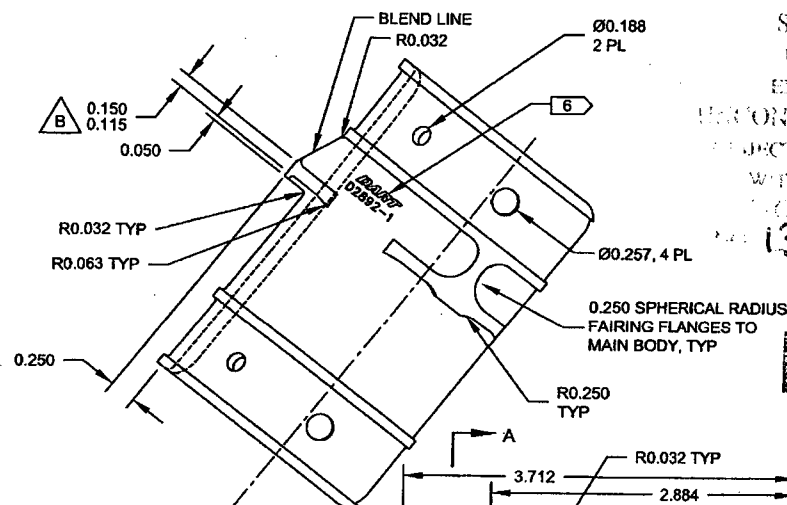
4) UNITS: INCHES UNLESS OTHERWISE NOTED

5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX

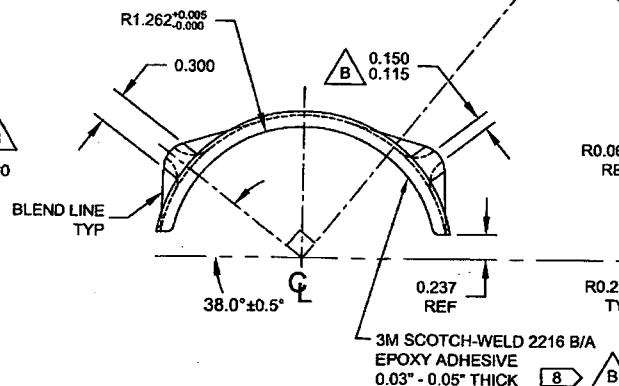
6) IDENTIFICATION: DART LOGO (PER DART SUPPLIED GRAPHIC) AND PART NUMBER IN THIS AREA WITH 0.125 HIGH LETTERING 0.010-0.020 DEEP, PER DART QSI 044 6.3.

7) WEIGHT: 0.41 lb

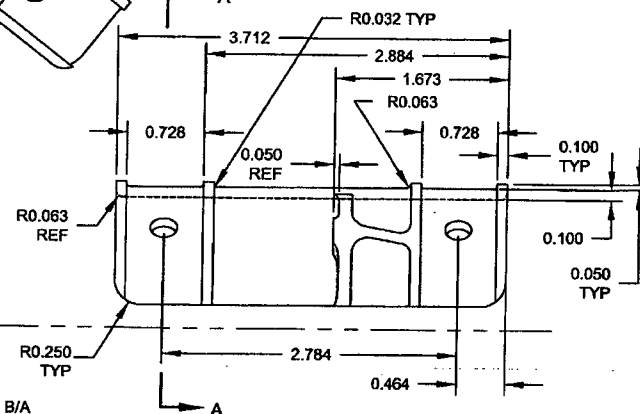
8) FOR THE ENTIRE INNER CONCAVE SURFACE: ABRASE SURFACE WITH 400-GRIT SANDPAPER. REMOVE RESIDUE WITH MEK (OR EQUIVALENT). APPLY 0.03" TO 0.05" THICK LAYER OF 3M SCOTCH-WELD 2216 B/A ADHESIVE TO MATING SURFACE OF SUPPORT. ALLOW TO CURE FOR 24 HOURS.



SECTION A-A



D2892-1 SUPPORT



SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
133485 M15
15-06-09

RELEASED
2011-07-28

B	RMV FINISH, ADD 3M 2216, ADD H925 MAT'L OPTION, UPDATE TOLERANCE (ZN D5-1.85-1.86-1)	CP	11.07.15
A	NEW ISSUE	CP	00.11.17
REV.	DESCRIPTION	BY	DATE
DESIGN	92	DART AEROSPACE LTD	
DRAWN	92	HAWKESBURY, ONTARIO, CANADA	
CHECKED	A.S.	DRAWING NO.	REV. B
MFG. APPR.	<i>[Signature]</i>	D2892	SHEET 1 OF 1
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	Ø2.500 SUPPORT	NT
DATE	11.07.15	COPYRIGHT © 2000 BY DART AEROSPACE LTD THIS DOCUMENT IS UNCLASSIFIED AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR REPRODUCED IN ANY FORM OR BY ANY MEANS WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	